

CLAIMS

What is desired to be secured by Letters Patent is:

1. An adjustable ladder comprising:
 - a) a first leg which is a first front leg in a use condition and which includes
 - (1) a first end that is a top end when said first leg is in the use condition, the first end having a pivot pin-accommodating hole defined therethrough,
 - (2) a second end that is a bottom end when said first leg is in the use condition,
 - (3) a longitudinal axis which extends between the first end of said first leg and the second end of said first leg,
 - (4) a first side surface,
 - (5) a second side surface,
 - (6) said first leg having a longitudinal length which is measured between the first end of said first leg and the second end of said first leg,
 - (7) a first support surface engaging shoe pivotally attached to said first leg adjacent to the second end of said first leg, the

first support surface-engaging shoe on said first leg including

- (A) a first mounting plate that is triangular in shape and which includes an apex and a base,
- (B) a second mounting plate that is triangular in shape and which includes an apex and a base,
- (C) a bottom element that connects the base of the first mounting plate of the first support surface-engaging shoe to the base of the second mounting plate of the first support surface-engaging shoe, the bottom element of the first support surface-engaging shoe including a first surface that is a top surface in the use condition, a second surface that is a bottom surface in the use condition, and a non-slip element on the second surface of the first support surface-engaging shoe and which is adapted to engage a ladder-supporting surface in the use condition,
- (D) the first mounting plate of the first

support surface-engaging shoe being located adjacent to the first side surface of said first leg and the second mounting plate of the first support surface-engaging shoe being located adjacent to the second side surface of said first leg, and

(E) a pivot pin which extends through said first leg and is connected to the first mounting plate of the first support surface-engaging shoe adjacent to the apex of the first mounting plate of the first support surface-engaging shoe and to the second mounting plate of the first support surface-engaging shoe adjacent to the apex of the second mounting plate of the first support surface-engaging shoe, the pivot pin of the first support surface-engaging shoe pivotally connecting the first support surface-engaging shoe to said first leg adjacent to the second end of said first leg,

(8) a pivot fastener which extends through said

first leg at a location spaced apart from the pivot pin of the first support surface-engaging shoe, and

(9) a brace storage pin fixedly mounted on said first leg and which extends outwardly from the first side surface of said first leg, the brace storage pin including a body having a proximal end fixedly mounted on said first leg, a distal end spaced apart from the first side surface of said first leg, and a head on the distal end of the brace storage pin, the brace storage pin being spaced apart from the pivot pin and from the pivot fastener;

b) a second leg which is a second front leg in the use condition and which includes

(1) a first end that is a top end when said second leg is in the use condition, the first end of said second leg having a pivot pin-accommodating hole defined therethrough,

(2) a second end that is a bottom end when said second leg is in the use condition,

(3) a longitudinal axis which extends between the first end of said second leg and the second end of said second leg,

- (4) a first side surface,
- (5) a second side surface,
- (6) said second leg having a longitudinal length which is measured between the first end of said second leg and the second end of said second leg, the longitudinal length of said second leg being equal to the longitudinal length of said first leg,
- (7) a second support surface-engaging shoe pivotally attached to said second leg adjacent to the second end of said second leg, the second support surface-engaging shoe on said second leg including
 - (A) a first mounting plate that is triangular in shape and which includes an apex and a base,
 - (B) a second mounting plate that is triangular in shape and which includes an apex and a base,
 - (C) a bottom element that connects the base of the first mounting plate of the second support surface-engaging shoe to the base of the second mounting plate of the second support surface-engaging

- shoe, the bottom element of the second support surface-engaging shoe including a first surface that is a top surface in the use condition, a second surface that is a bottom surface in the use condition, and a non-slip element on the second surface of the second support surface-engaging shoe and which is adapted to engage a ladder supporting surface in the use condition,
- (D) the first mounting plate of the second support surface-engaging shoe being located adjacent to the first side surface of said second leg and the second mounting plate of the second support surface-engaging shoe being located adjacent to the second side surface of said second leg, and
- (E) a pivot pin which extends through said second leg and is connected to the first mounting plate of the second support surface-engaging shoe adjacent to the apex of the first mounting plate of the second support surface-engaging shoe and

to the second mounting plate of the second support surface-engaging shoe adjacent to the apex of the second mounting plate of the second support surface-engaging shoe, the pivot pin of the second support surface-engaging shoe pivotally connecting the second support surface-engaging shoe to said second leg adjacent to the second end of said second leg,

- (8) a pivot fastener which extends through said second leg at a location spaced apart from the pivot pin of the second support surface engaging shoe, and
- (9) a brace storage pin fixedly mounted on said second leg and which extends outwardly from the first side surface of said second leg, the brace storage pin of said second leg including a body having a proximal end fixedly mounted on said second leg, a distal end spaced apart from the first side surface of said second leg, and a head on the distal end of the brace storage pin on said second leg, the brace storage pin of said second leg

- being spaced apart from the pivot pin of said second leg and from the pivot fastener of said second leg;
- c) a third leg which is a first rear leg in the use condition and which includes
- (1) a first end that is a top end when said third leg is in the use condition, the first end of said third leg having a pivot pin-accommodating hole defined therethrough,
 - (2) a second end that is a bottom end when said third leg is in the use condition,
 - (3) a longitudinal axis that extends between the first end of the third leg and the second end of the third leg,
 - (4) a first side surface,
 - (5) a second side surface,
 - (6) the third leg being hollow and having a bore defined therein, the bore of the third leg extending from the second end of the third leg toward the first end of the third leg in the direction of the longitudinal axis of the third leg,
 - (7) a longitudinal length of the third leg which is measured between the first end of the

third leg and the second end of the third leg, the longitudinal length of said third leg being less than the longitudinal length of said first leg,

- (8) a first lock pin-accommodating hole defined through the first side surface of said third leg adjacent to the second end of said third leg,
- (9) a second lock pin-accommodating hole defined through the second side surface of said third leg adjacent to the second end of said third leg, the second lock pin-accommodating hole of said third leg being aligned with the first lock pin-accommodating hole of said third leg,
- (10) a brace arm-supporting element fixedly mounted on the first side surface of said third leg, the brace arm-supporting element including a proximal end fixedly mounted on the first side surface of said third leg, a body, a distal end spaced apart from the first side surface of said third leg, and a head on the distal end of the brace arm-supporting element of said third leg,

(11) a third leg extension element telescopingly accommodated in the bore defined in said third leg, the third leg extension element including

- (A) a first end which is a top end when said third leg is in the use condition, the first end of the third leg extension element being located inside the bore defined in said third leg,
- (B) a second end which is a bottom end when said third leg is in the use condition, the second end of the third leg extension element being located outside the bore defined in said third leg,
- (C) a longitudinal axis which extends between the first end of the third leg extension element and the second end of the third leg extension element,
- (D) a first side surface,
- (E) a second side surface,
- (F) a plurality of lock pin-accommodating holes defined through the third leg extension element at locations on the third leg extension element that are

spaced apart from each other in the direction of the longitudinal axis of the third leg extension element, each of the lock pin-accommodating holes defined in the third leg extension element being adapted to be aligned with the first and second lock pin-accommodating holes defined through the first and second side surfaces of said third leg, and

(G) a third leg extension element lock pin which is adapted to extend through the first and second lock pin-accommodating holes defined through the first and second side surfaces of said third leg and through a selected one of the plurality of lock pin-accommodating holes defined through the third leg extension element to lock the third leg extension element to said third leg, and

(12) a third support surface-engaging shoe pivotally attached to the third leg extension element adjacent to the second end of the third leg extension element, the third support surface engaging shoe of the third

leg extension element including

- (A) a first mounting plate that is triangular in shape and which includes an apex and a base,
- (B) a second mounting plate that is triangular in shape and which includes an apex and a base,
- (C) a bottom element that connects the base of the first mounting plate of the third support surface-engaging shoe to the base of the second mounting plate of the third support surface-engaging shoe, the bottom element of the third support surface-engaging shoe including a first surface that is a top surface in the use condition, a second surface that is a bottom surface in the use condition, and a non-slip element on the second surface of the third support surface-engaging shoe and which is adapted to engage a ladder-supporting surface in the use condition,
- (D) the first mounting plate of the bottom element of the third support surface-

engaging shoe being located adjacent to the first side surface of the third leg extension element and the second mounting plate of the bottom element of the third support surface-engaging shoe being located adjacent to the second side surface of the third leg extension element, and

- (E) a pivot pin which extends through said third leg extension element and is connected to the first mounting plate of the third support surface-engaging shoe adjacent to the apex of the first mounting plate of the third support surface-engaging shoe and to the second mounting plate of the third support surface-engaging shoe adjacent to the apex of the second mounting plate of the third support surface-engaging shoe, the pivot pin on said third leg pivotally connecting the third support surface-engaging shoe to the third leg extension element adjacent to the second end of said third leg extension element;

- d) a fourth leg which is a second rear leg in the use condition and which includes
 - (1) a first end that is a top end when said fourth leg is in the use condition, the first end of said fourth leg having a pivot pin-accommodating hole defined therethrough,
 - (2) a second end that is a bottom end when said fourth leg is in the use condition,
 - (3) a longitudinal axis that extends between the first end of the fourth leg and the second end of the fourth leg,
 - (4) a first side surface,
 - (5) a second side surface,
 - (6) said fourth leg being hollow and having a bore defined therein, the bore of said fourth leg extending from the second end of the fourth leg toward the first end of the fourth leg in the direction of the longitudinal axis of the fourth leg,
 - (7) a longitudinal length of the fourth leg which is measured between the first end of the fourth leg and the second end of the fourth leg, the longitudinal length of said fourth leg being less than the longitudinal length

of said second leg and being equal to the longitudinal length of said third leg,

- (8) a first lock pin-accommodating hole defined through the first side surface of said fourth leg adjacent to the second end of said fourth leg,
- (9) a second lock pin-accommodating hole defined through the second side surface of said fourth leg adjacent to the second end of said fourth leg, the second lock pin-accommodating hole of said fourth leg being aligned with the first lock pin-accommodating hole of said fourth leg,
- (10) a brace arm-supporting element fixedly mounted on the first side surface of said fourth leg, the brace arm-supporting element of said fourth leg including a proximal end fixedly mounted on the first side surface of said fourth leg, a body, a distal end spaced apart from the first side surface of said fourth leg, and a head on the distal end of the brace arm-supporting element of fourth leg,
- (11) a fourth leg extension element telescopingly

accommodated in the bore defined in said fourth leg, the fourth leg extension element including

- (A) a first end which is a top end when said fourth leg is in the use condition, the first end of the fourth leg extension element being located inside the bore defined in said fourth leg,
- (B) a second end which is a bottom end when said fourth leg is in the use condition, the second end of the fourth leg extension element being located outside the bore defined in said fourth leg,
- (C) a first side surface,
- (D) a second side surface,
- (E) a longitudinal axis which extends between the first end of the fourth leg extension element and the second end of the fourth leg extension element,
- (F) a plurality of lock pin-accommodating holes defined through the fourth leg extension element at locations on the fourth leg extension element that are spaced apart from each other in the

direction of the longitudinal axis of the fourth leg extension element, each of the lock pin-accommodating holes defined in the fourth leg extension element being adapted to be aligned with the first and second lock pin-accommodating holes defined through the first and second side surfaces of said fourth leg, and

(G) a fourth leg extension element lock pin which is adapted to extend through the first and second lock pin-accommodating holes defined through the first and second side surfaces of said fourth leg and through a selected one of the plurality of lock pin-accommodating holes defined through the fourth leg extension element to lock the fourth leg extension element to said fourth leg, and

(12) a fourth support surface-engaging shoe pivotally attached to the fourth leg extension element adjacent to the second end of the fourth leg extension element, the

fourth support surface-engaging shoe of the fourth leg extension element including

- (A) a first mounting plate that is triangular in shape and which includes an apex and a base,
- (B) a second mounting plate that is triangular in shape and which includes an apex and a base,
- (C) a bottom element that connects the base of the first mounting plate of the fourth support surface-engaging shoe to the base of the second mounting plate of the fourth support surface engaging element, the bottom element of the fourth support surface-engaging shoe including a first surface that is a top surface in the use condition, a second surface that is a bottom surface in the use condition, and a non-slip element on the second surface of the fourth support surface-engaging shoe and which is adapted to engage a ladder-supporting surface in the use condition,
- (D) the first mounting plate of the bottom

element of the fourth support surface-engaging shoe being located adjacent to the first side surface of the fourth leg extension element and the second mounting plate of the bottom element of the fourth support surface-engaging shoe being located adjacent to the second side surface of the fourth leg extension element, and

- (E) a pivot pin which extends through said fourth leg extension element and is connected to the first mounting plate of the fourth support surface-engaging shoe adjacent to the apex of the first mounting plate of the fourth support surface-engaging element and to the second mounting plate of the fourth support surface-engaging shoe adjacent to the apex of the second mounting plate of the fourth support surface-engaging shoe, the pivot pin on said fourth leg pivotally connecting the fourth support surface-engaging shoe to the fourth leg extension element adjacent to the second

end of said fourth leg extension
element;

- e) a first brace element which includes
 - (1) a proximal end pivotally attached to said first leg by the pivot fastener on said first leg,
 - (2) a distal end,
 - (3) a longitudinal axis which extends between the proximal end of said first brace element and the distal end of said first brace element,
 - (4) a first side edge,
 - (5) a second side edge,
 - (6) a plurality of notches defined in said first brace element adjacent to the first side edge, the plurality of notches being spaced apart from each other in the direction of the longitudinal axis of said first brace element,
 - (7) a lock notch defined in said first brace element adjacent to the distal end of said first brace element and adjacent to the second side edge of said first brace element,
 - (8) said first brace element being pivotal between a use position extending between said first

and third legs and a stored position in which the longitudinal axis of said first brace element extends in the direction of the longitudinal axis of said first leg,

(9) the lock notch of said first brace element being located and sized to engage the brace storage pin on said first leg when said first brace element is in the stored position, and

(10) each notch of the plurality of notches of said first brace element being sized to engage the brace-supporting element on said third leg;

f) a second brace element which includes

(1) a proximal end pivotally attached to said second leg by the pivot fastener on said second leg,

(2) a distal end,

(3) a longitudinal axis which extends between the proximal end of said second brace element and the distal end of said second brace element,

(4) a first side edge,

(5) a second side edge,

(6) a plurality of notches defined in said second brace element adjacent to the first side edge

of said second brace element, the plurality of notches of said second brace element being spaced apart from each other in the direction of the longitudinal axis of said second brace element,

- (7) a lock notch defined in said second brace element adjacent to the distal end of said second brace element and adjacent to the second side edge of said second brace element,
- (8) said second brace element being pivotal between a use position extending between said second and fourth legs and a stored position in which the longitudinal axis of said second brace element extends in the direction of the longitudinal axis of said second leg,
- (9) the lock notch of said second brace element being located and sized to engage the brace storage pin on said second leg when said second brace element is in the stored position, and
- (10) each notch of the plurality of notches of said second brace element being sized to engage the brace-supporting element on said

- fourth leg;
- g) a top unit which includes
- (1) a planar body having a peripheral edge,
- (2) a plurality of tool-accommodating holes defined through the planar body,
- (3) a skirt on the peripheral edge of the planar body, the skirt including a front section, a rear section, a first end section and a second end section,
- (4) a first pivot pin-accommodating hole defined through the first end section of the skirt adjacent to the front section of the skirt,
- (5) a second pivot pin-accommodating hole defined through the first end section of the skirt adjacent to the rear section of the skirt,
- (6) a third pivot pin-accommodating hole defined through the second end section of the skirt adjacent to the front section of the skirt, and
- (7) a fourth pivot pin-accommodating hole defined through the second end section of the skirt adjacent to the rear section of the skirt;
- h) a first pivot pin which extends through the first pivot pin-accommodating hole of the skirt of said

top unit and through the pivot pin-accommodating hole defined in said first leg adjacent to the first end of said first leg, said first leg being pivotally attached to said top unit by said first pivot pin;

- i) a second pivot pin which extends through the second pivot pin-accommodating hole in the skirt of said top unit and through the pivot pin-accommodating hole defined in said third leg adjacent to the first end of said third leg, said third leg being pivotally attached to said top unit by said second pivot pin;
- j) a third pivot pin which extends through the third pivot pin-accommodating hole of the skirt of said top unit and through the pivot pin-accommodating hole defined in said third leg adjacent to the first end of said third leg, said third leg being pivotally attached to said top unit by said third pivot pin;
- k) a fourth pivot pin which extends through the fourth pivot pin-accommodating hole of the skirt of said top unit and through the pivot pin-accommodating hole defined in said fourth leg adjacent to the first end of said fourth leg, said

- fourth leg being pivotally attached to said top unit by said fourth pivot pin;
- l) a plurality of ladder steps which extend between said first leg and said second leg, each ladder step including a first surface which is a top surface in the use condition and a non-slip element on the top surface of each ladder step;
 - m) a work support unit pivotally attached to said third leg and to said fourth leg, said work support unit including a plurality of tool accommodating holes defined therethrough and a support area that is sized to securely support and encircle a one gallon paint can;
 - n) a first tether having a proximal end fixedly secured to said third leg and a distal end fixedly secured to the third leg extension element lock pin;
 - o) a second tether having a proximal end fixedly secured to said fourth leg and a distal end fixedly secured to the fourth leg extension element lock pin;
 - p) a plurality of ladder steps fixedly secured to said first and second legs; and
 - q) a non-slip element fixedly mounted on each ladder

step.